

Working with Timelines

Motion implies time. A static object, such as an ordinary HTML Web page, can exist either in a single moment or over a period of time. Conversely, moving objects (such as Dynamic HTML layers flying across the screen) need a few seconds to complete their path. All of Dreamweaver's Dynamic HTML animation effects use the Timeline feature to manage this conjunction of movement and time.

Timelines can do much more than move a layer across a Web page, however. A timeline can coordinate an entire presentation: starting the background music, scrolling the opening rolling credits, and cueing the voice-over narration on top of a slideshow. These actions are all possible with Dreamweaver because, in addition to controlling a layer's position, timelines can also trigger any of Dreamweaver's JavaScript behaviors on a specific frame.

This chapter explores the full and varied world of timelines. After an introductory section brings you up to speed on the underlying concepts of timelines, you learn how to insert and modify timelines to achieve cutting-edge effects. A Dreamweaver Technique shows you, step by step, how to create a multiscreen slideshow complete with fly-in and fly-out graphics. From complex multilayer animations to slideshow presentations, you can do it all with Dreamweaver timelines.

**Note**

Because timelines are so intricately intertwined with layers and behaviors, you need to have a good grasp of these concepts. If you're not familiar with the topics of layers and behaviors, be sure to read Chapters 21 and 23.

Into the Fourth Dimension with Timelines

Web designers in the early days had little control over the interaction between their Web pages and the fourth dimension (time). Only animated GIFs, Java, or animation programs such as Macromedia's Flash could create the illusion of motion events. Unfortunately, all of these technologies have some limitations.



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Adding animation with Dreamweaver timelines

Using the Timelines panel

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Dreamweaver Technique: Creating a multiscreen slideshow



The general problem with animated GIF images is file size. An animated GIF starts out as an image for every frame. Therefore, if you incorporate a 3-second, 15-frames-per-second animation, you are asking the user to download the compressed equivalent of 45 separate images. Although an animated GIF is an indexed color file with a limited 256 colors and uses the format's built-in compression, the GIF file is still a relatively large graphic file. Moreover, for all their apparent animated qualities, GIFs enable no true interaction other than as links to other URLs. Animations created with Dynamic HTML and Dreamweaver's timelines, on the other hand, do not significantly increase the overall size of the Web page and are completely interactive.

DHTML is not the only low-bandwidth approach to animations with interactive content for the Web. You can create animations, complete with user-driven interactions, using Java — provided, of course, that you're a Java programmer. Certainly, Java development tools are making the language easier to use, but you still must deal with the rather long load time of any Java applet and the increasing variety of Java versions. As another option, Macromedia Director movies can be compressed or “shocked” to provide animation and interactivity in your pages. Like Java, the Director approach requires a bit of a learning curve. Shockwave movies can also have long load times and require the user to have a plugin application.

Macromedia's Flash might be the best alternative to DHTML and animated GIFs, though Flash has its own set of caveats to keep in mind. On the plus side, Flash files are small and can be streamed through their own player. This arrangement is tempting, and if you just want animation on a page, Flash is probably a superior choice to any of the approaches previously described. On the minus side, Flash is limited to its own proprietary features and functions, and every user must have the Flash Plugin or ActiveX control installed — although the pervasiveness of the Flash player is rapidly making this point moot. However, you cannot layer Flash animation on top of other layers on a page. Moreover, once you, or another designer, have created a Flash animation, the animation must be edited with the same animation package.

Timeline capabilities

Dreamweaver timelines are implemented in HTML code. For the movement of one layer straight across a Web page, Dreamweaver generates about 70 lines of code devoted to initializing and playing the timeline. But just what is a timeline? A timeline is composed of a series of frames. A frame is a snapshot of what the Web page — more specifically, the objects on the timeline — look like at a particular moment. You probably know that a movie is made up of a series of still pictures; when viewed quickly, the pictures create the illusion of movement. Each individual picture is a frame; movies show 24 frames per second, and video uses about 30 frames per second. Web animation, on the other hand, generally displays about 15 frames per second (fps). Not surprisingly, Dreamweaver's timeline is similar to the one used in Macromedia's timeline-based, multimedia authoring tool and animation package, Director.

If you have to draw each frame of a 30-second animation, even at 15 fps you won't have time for other work. Dreamweaver uses the concept of *keyframes* to make a simple layer movement workable. Each keyframe contains a change in the timeline object's properties, such as position. For example, suppose you want your layer to start at the upper-left (represented by the coordinates 0,0) and travel to the lower-right (at 750,550). To accomplish this task, you need only specify the layer's position for the two keyframes — the start and the finish — and Dreamweaver generates all the frames in between.

Timelines have three primary roles:

- ♦ A timeline can alter a layer's position, dimensions, visibility, and depth.
- ♦ Timelines can change the source for any image on a Web page and cause another graphic of the same height and width to appear in the same location.
- ♦ Any of Dreamweaver's JavaScript behaviors can be triggered on any frame of a timeline.

A few ground rules

Keep the following basic guidelines in mind when you're using timelines in the Web pages you create with Dreamweaver:

- ♦ Timelines require a 4.0 or later browser.
- ♦ For a timeline to be able to animate an object, such as text, the object must be within a layer. If you try to create a timeline with an element that is not in a layer, Dreamweaver warns you and prevents you from adding the object to the timeline.
- ♦ Events don't have to start at the beginning of a timeline. If you want to have an action begin 5 seconds after a page has loaded, you can set the behavior on frame 60 of the timeline, with a frame rate of 15 frames per second.
- ♦ The selected frame rate is a "best-case scenario" because the actual frame rate depends on the user's system. A slower system or one that is simultaneously running numerous other programs can easily degrade the frame rate.
- ♦ You can include multiple animations on one timeline. The only restriction is that you can't have two animations affecting the same layer at the same time. Dreamweaver prevents you from making this error.
- ♦ You can have multiple timelines that animate different layers simultaneously or the same layer at different times. Although you can set two or more timelines to animate the same layer at the same time, the results are difficult to predict and generally unintended.



Tip

If you move a timeline's JavaScript code from its file of origin into an external JS file, serious timeline execution problems can occur in some browsers. For this reason, I heartily recommend leaving all your timeline code in its original file.

Creating Animations with Timelines

Dreamweaver provides an excellent tool for managing timelines — the Timelines panel. Open this tool by choosing Window ⇨ Others ⇨ Timelines or using the keyboard shortcut Alt+F9 (Option+F9).

The Timelines panel uses VCR-style controls combined with a playback head, which is a visual representation showing which frame is the current one. As shown in Figure 22-1, the Timelines panel gives you full control over any of the timeline functions.

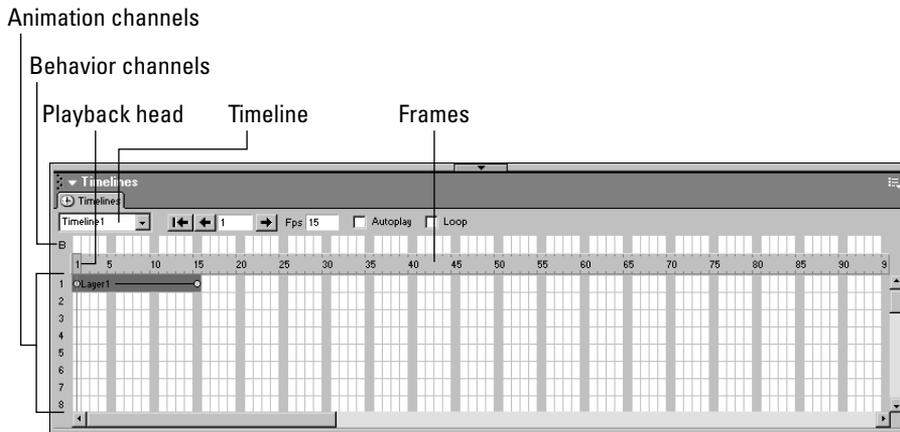


Figure 22-1: Dreamweaver's Timelines panel enables you to quickly and easily master animation control.

The Timelines panel has four major areas:

- ♦ **Timeline controls:** Includes the Timeline drop-down list for selecting the current timeline; the Rewind, Back, and Play buttons; the Fps (frame rate) text box; and the Autoplay and Loop checkboxes
- ♦ **Behavior channel:** Shows the placement of any behaviors attached to specific frames of the timeline
- ♦ **Frames:** Displays the frame numbers for all timelines and the playback head showing the current frame number
- ♦ **Animation channels:** Represents the animations for any included layers and images

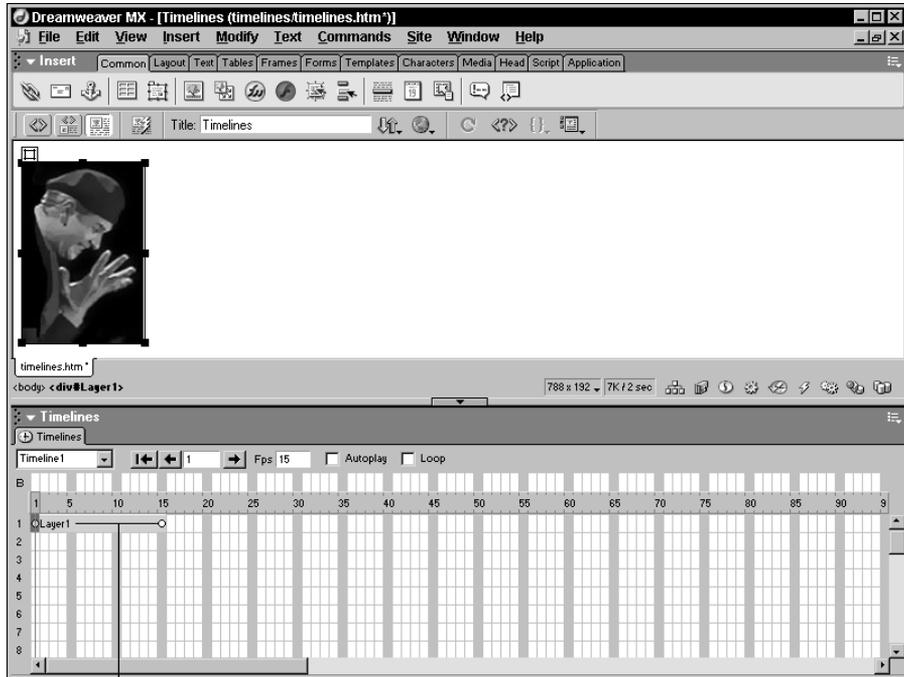
Adding Layers to the Timelines Panel

As with many of Dreamweaver's functions, you can add a layer or an image to the Timelines panel in more than one way. You can insert a layer into a timeline through the menus (Modify ⇨ Timeline ⇨ Add Object to Timeline), you can drag-and-drop an object into a timeline, or you can use the keyboard shortcut, Ctrl+Alt+Shift+T (Command+Option+Shift+T). When you add an object to a timeline, Dreamweaver inserts an animation bar of 15 frames in length, labeled with the object's name. The animation bar shows the duration (the number of frames) of the timeline's effect on the object. An animation bar is initially created with two keyframes: the start and the end. To add a layer or image to the Timelines panel through the menus, follow these steps:

1. Choose Window ⇨ Others ⇨ Timelines or use the keyboard shortcut, Alt+F9 (Option+F9), to open the Timelines panel.
2. In the Document window, select the layer or image you want to add to the timeline.

Bear in mind that you can use timelines to move a layer around the browser window, but not to move an image (unless it is contained in a layer). The only thing timelines can do with respect to an image is to change its source, causing another graphic of the same height and width to appear in the same location.

3. Choose **Modify** ⇨ **Timeline** ⇨ **Add Object to Timeline**. An animation bar appears in the first frame of the timeline, as shown in Figure 22-2.



Animation bar

Figure 22-2: The default animation bar is set at 15 frames but can easily be modified.

4. To add another object, repeat Steps 2 and 3. As previously noted, you can add as many objects to a timeline as you desire. Each additional animation bar is inserted beneath the preceding bar.

Tip

The first time you add an image or layer to the Timelines panel, Dreamweaver displays an alert message that details the limitations of timelines. If you don't want to see this alert, turn it off by checking the **Don't Show Me This Message Again** checkbox.

You have a little more flexibility when you add an object by dragging it into the timeline. Instead of the animation bar always beginning at frame 1, you can drop the object in to begin on any frame. This approach is useful, especially if you are putting more than one object into the same animation channel. To place an object in a timeline with the drag-and-drop method, follow these steps:

1. Open the Timelines panel by choosing **Window** ⇨ **Others** ⇨ **Timelines** or using the keyboard shortcut **Alt+F9** (**Option+F9**).
2. In the Document window, select the object — layer or image — that you want to add to the timeline and drag it to the Timelines panel. As soon as the object is over the Timelines panel, a 15-frame animation bar appears.

3. Holding the mouse button down, position the animation bar so that the animation begins in the desired frame. Release the mouse button to drop the object into the timeline.

**Note**

Your placement does not have to be exact; you can modify it later.

Placing a layer or image on a timeline is just the first step. To begin using your timeline in depth, you have to make changes to the object for the keyframes and customize the timeline.

Modifying a Timeline

When you add an object — either an image or a layer — to a timeline, notice that the animation bar has an open circle at its beginning and end. An open circle marks a keyframe. As previously explained, the designer specifies a change in the state of the timeline object in a keyframe. For example, when you first insert a layer, the two generated keyframes have identical properties — the layer's position, size, visibility, and depth are unchanged. For any animation to occur, you have to change one of the layer's properties for one of the keyframes. For example, to move a layer quickly across the screen, follow these steps:

1. Create a layer. If you like, add an image or a background color so that the layer is more noticeable.
2. Open the Timelines panel.
3. Drag the layer into the Timelines panel and release the mouse button.
4. Select the ending keyframe of the layer's animation bar.
The playback head (red rectangle) moves to the new frame.
5. In the Document window, grab the layer's selection handle and drag the layer to a new location. A thin line connects the starting position of the layer to the ending position, as shown in Figure 22-3. This line is the *animation path*.
6. To preview your animation, first click the Rewind button in the Timelines panel and then click and hold down the Play button.

If you want to change the beginning position of your layer's animation path, select the starting keyframe and then move the layer in the Document window. To alter the final position of the layer's animation path, select the ending keyframe and then move the layer.

**Tip**

For more precise control of your layer's position in a timeline, select a keyframe and then, in the layer's Property inspector, change the Left and/or Top values. You can also select the layer and use the arrow keys to move it.

Altering the animation bars

A Web designer can easily stretch or alter the range of frames occupied by a layer or image in an animation bar. You can make an animation longer or smoother, or have it start at an entirely different time. You can also move the layer to a different animation channel so it runs before or after another animation.

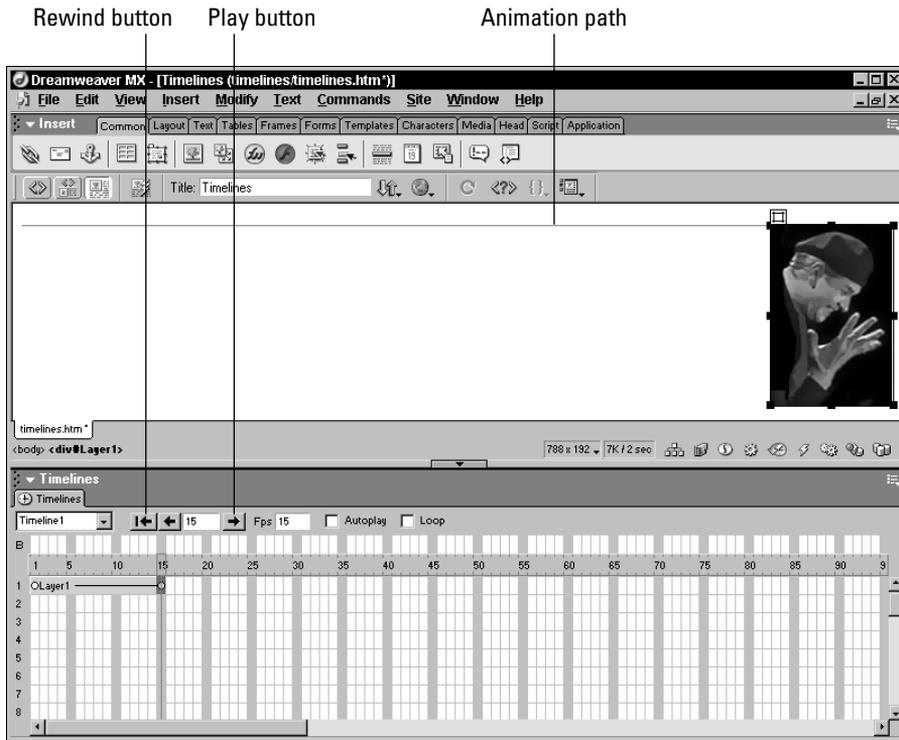


Figure 22-3: When you move a layer on a timeline, Dreamweaver displays an animation path.

Use the mouse to drag an animation bar around the timeline. Click any part of the bar except the keyframe indicators and move it as needed. To change the length of an animation, select the first or final keyframe and drag it forward or backward to a new frame.

Use either of the following techniques to remove (delete) an animation bar:

- ♦ Select the animation bar by clicking anywhere on it, and choose **Modify** ⇨ **Timeline** ⇨ **Remove Object**.
- ♦ Right-click (Control+click) the animation bar and choose **Remove Object** from the context menu.

Using the Timeline controls

As you probably noticed if you worked through the example in the preceding section, you don't have to use a browser to preview a timeline. The Timeline controls shown in Figure 22-4 enable you to fine-tune your animations before you view them through a browser.

Tip

If you're using the Timelines panel controls to play a timeline animation that moves down below the visible portion of the Document window, you can press F4 to hide the Timelines panel (and all other Dreamweaver panels) to maximize screen space. To redisplay your panels, press F4 again.

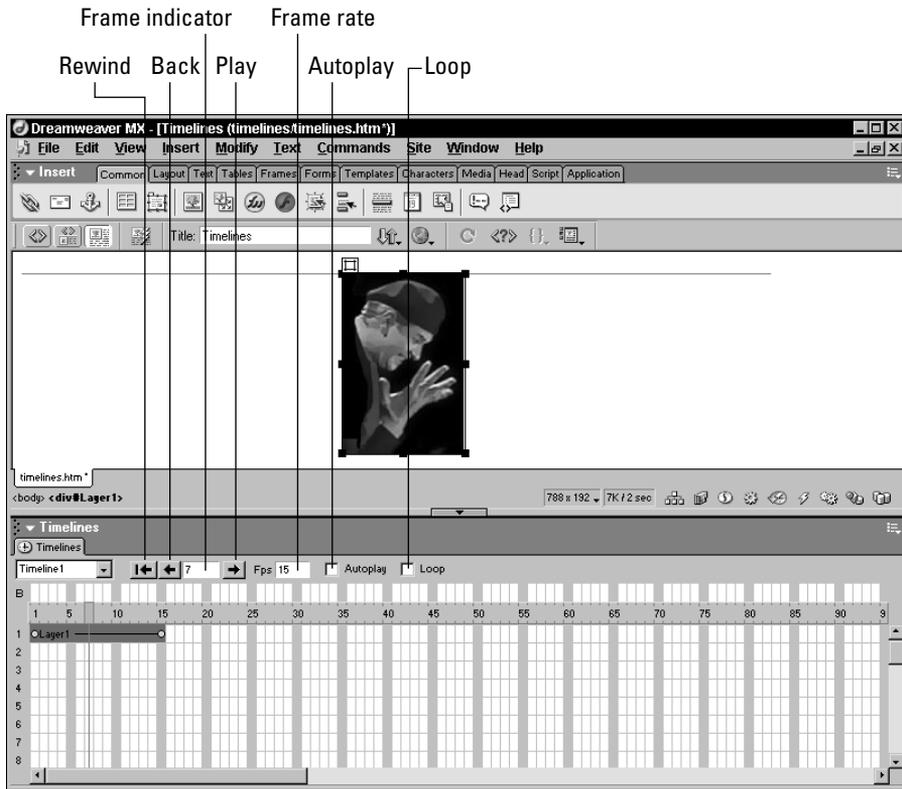


Figure 22-4: The Timeline controls enable you to move back and forth in your timeline, easily and precisely.

At the top-left corner is the Timeline drop-down list, which is used to indicate the current timeline. By default, every new timeline is given the name *Timeline n* , where n indicates how many timelines have been created. You can rename the timeline by selecting it and typing in the new name. As you accumulate and use more timelines, you should give them descriptive, recognizable names.



Caution

A timeline name must have an alphanumeric, one-word name that begins with a letter.

The next three buttons in the control bar enable you to move through the frames of a timeline. From left to right:

- ♦ **Rewind:** Moves the playback head to the first frame of the timeline.
- ♦ **Back:** Moves the playback head to the previous frame of the timeline. You can hold down the Back button to play the timeline in reverse. This behavior loops: When the first frame is reached, the playback head automatically moves to the last frame of the timeline and continues playing it.

- ♦ **Play:** Moves the playback head to the next frame; hold down the Play button to play the timeline normally. As with the Back button, this behavior loops: When the last frame is reached, the playback head moves to the first frame of the current timeline and continues.

The field between the Back and Play buttons is the Frame Indicator text box. To jump to any specific frame, enter the frame number in this box.

The next item in the control bar is the Fps (frames per second) text box. To change the frame rate, enter a new value in the Fps text box and press Tab or Enter (Return). The frame rate you set is an ideal number that a user's browser attempts to reach. The default rate of 15 frames per second is a good balance for both Macintosh and Windows systems.



Tip

Because browsers play every frame regardless of the frame rate setting, increasing the frame rate does not necessarily make your animations smoother. A better way to create smooth animations is to drag the end keyframe farther out, which increases the number of frames used by your animation.

The next two checkboxes, Autoplay and Loop, affect how the animation is played.

Autoplay

If you enable the Autoplay option, the timeline begins playing as soon as the Web page is fully downloaded. Dreamweaver alerts you to this arrangement by telling you that the Play Timeline action is attached to an `onLoad` event. Autoplay is achieved by inserting code that looks similar to the following into the `<body>` tag:

```
<body bgcolor="#FFFFFF" onload="MM_timelinePlay('Timeline1')">
```



Caution

If you don't use the Autoplay feature, you must attach the Play Timeline action to another event and tag, such as `onClick` and a button graphic. Otherwise, the timeline will not play. Note that if your Show Events For option is set to 3.0 and Later Browsers, the only available event is `onMouseOver`. To make `onClick` and other events available, change the Show Events For to 4.0 and Later Browsers by choosing Add (+) from the Behaviors panel, then selecting Show Events For ⇄ 4.0 and Later Browsers.

Looping

Mark the Loop checkbox if you want an animation to repeat once it has reached the final frame. When Loop is enabled, the default causes the layer to replay itself an infinite numbers of times; however, you can change this setting.

When you first enable the Loop checkbox, Dreamweaver alerts you that it is placing a Go To Timeline Frame action after the last frame of your timeline. To set the number of repetitions for a looping timeline, follow these steps:

1. In the Timelines panel, check the Loop checkbox.
2. Dreamweaver displays an alert informing you that the Go To Timeline Frame action is being added one frame past your current final frame. To disable these alerts, select the Don't Show Me This Message Again option.
3. In the Behaviors channel (the Timeline channel marked with a B, as shown in Figure 22-1), double-click the behavior you just added.

Note

When you first add a behavior to a timeline, Dreamweaver presents a dialog box reminding you how to perform this action. Select the Don't Show Me This Message Again option when you've mastered the technique.

The Behaviors panel opens, with an `onFrame` event in the Events column and a Go To Timeline Frame action in the Actions pane.

4. Double-click the `onFrame` event. The Go To Timeline Frame dialog box opens (see Figure 22-5).

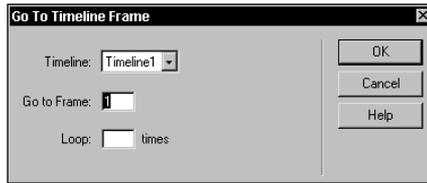


Figure 22-5: Selecting the Loop option on the Timelines panel adds a Go To Timeline Frame action, which you can customize.

5. Enter a positive number in the Loop text box to set the number of times you want your timeline to repeat. To keep the animation repeating continuously, leave the Loop text box blank.
6. Click OK when you are finished.

Tip

Your animations don't have to loop back to the beginning each time. By entering a different frame number in the Go to Frame text box of the Go To Timeline Frame dialog box, you can repeat just a segment of the animation.

Adding keyframes

Animating a timeline can go far beyond moving your layer from point A to point B. Layers (and the content within them) can dip, swirl, zigzag, and generally move in any fashion—all made possible by keyframes in which you have entered some change for the object. Dreamweaver calculates all the differences between each keyframe, whether the change is in a layer's position or size. Each timeline starts with two keyframes: the beginning and the end; you have to add other keyframes before you can insert the desired changes.

You can add a keyframe to a timeline in two different ways. The first method uses the Add Keyframe command, and the second method uses the mouse to click a keyframe into place.

Note

Do not confuse the Add Keyframe command with the Add Frame command, both of which are found in the Modify ⇨ Timeline menu. The former adds a keyframe to the timeline; the latter adds a normal frame to the timeline.

Adding keyframes with the Add Keyframe command

To add a keyframe with the Add Keyframe command, follow these steps:

1. In the Timelines panel, select the animation bar for the object with which you are working.
2. Select the frame in which you want to add a keyframe.
3. Add your keyframe by any of the following methods:
 - Choose Modify ⇨ Timeline ⇨ Add Keyframe.
 - Press the F6 key.
 - Right-click (Control+click) the frame in the animation bar and, from the context menu, choose Add Keyframe.

A new keyframe is added on the selected frame, signified by the open circle in the animation bar.

While your new keyframe is selected, you can alter the layer's position, size, visibility, or depth. For example, if your animation involves moving a layer across the screen, you can drag the layer to a new position while the new keyframe is selected. The animation path is redrawn to incorporate this new position, as illustrated in Figure 22-6.

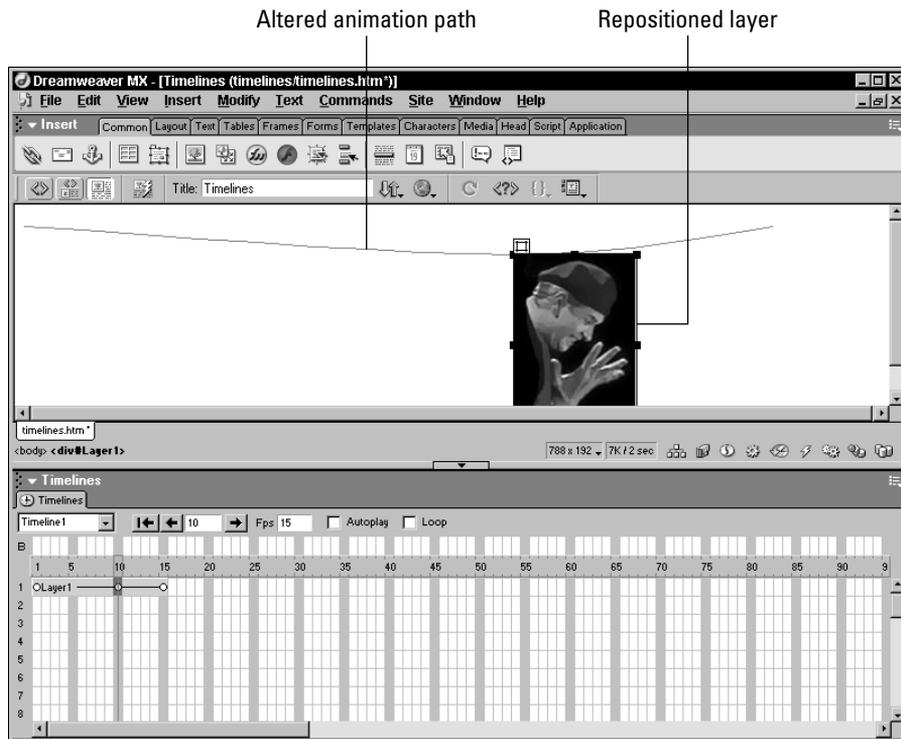


Figure 22-6: Repositioning a layer while a keyframe is selected can redirect your animation path.

Adding a keyframe with the mouse

The second method for adding a keyframe is quicker. To add a keyframe using the mouse, simply hold down the Ctrl (Command) key. Click anywhere in the animation bar to add a keyframe. Your cursor turns into a small open circle when it is over the Timeline window to show that it is ready to add a new keyframe.

What if you want to move the keyframe? Simply click and drag the keyframe to a new frame, sliding it along the animation bar in the Timelines panel.

**Tip**

If, after plotting out an elaborate animation with a layer, you discover that you need to shift the entire animation—for example, 6 pixels to the right—you don't have to redo all your work. Just select the animation bar in the Timelines panel and then, in the Document window, move the layer in question. Dreamweaver shifts the entire animation to your new location.

Removing timeline elements

To remove an element from the Timelines panel:

1. Select the element that you want to remove.
2. Choose **Modify ⇨ Timeline ⇨ Remove *Element***, where *Element* is the element you want to remove.

For example, to remove a keyframe, you would select the keyframe and then choose **Modify ⇨ Timeline ⇨ Remove Keyframe**.

The context menu in the Timelines panel also contains all the removal commands. Right-click (Control+click) the Timelines panel element you want to remove and, in the context menu (see Figure 22-7), choose the desired removal command: **Remove Keyframe**, **Remove Object**, **Remove Behavior**, **Remove Frame**, or **Remove Timeline**. Alternatively, right-click (Control+click) the element and simply choose **Delete** from the context menu.

**Tip**

To copy or move an entire timeline to another document, select the timeline and use the handy **Cut**, **Copy**, and **Paste** commands from the Timelines panel context menu.

Changing animation speed

You can alter your Dynamic HTML animation speed with two different methods that can be used separately or together:

- ♦ Drag out the final keyframe in the animation bar to cover additional frames, or drag it back to cover fewer frames. Any keyframes within the animation bar are kept proportional to their original settings. This method works well in conjunction with altering the speed of an individual animation bar.
- ♦ Change the frames per second value in the **Fps** text box of the Timelines panel. Increasing the number of frames per second accelerates the animation, and vice versa. Adjusting the **Fps** value affects every layer contained within the timeline; you cannot use this method for individual layers.

**Caution**

Browsers play every frame of a Dynamic HTML animation, regardless of the system resources. Some systems, therefore, play the same animation faster or slower than others. Don't assume every system has the same timing.

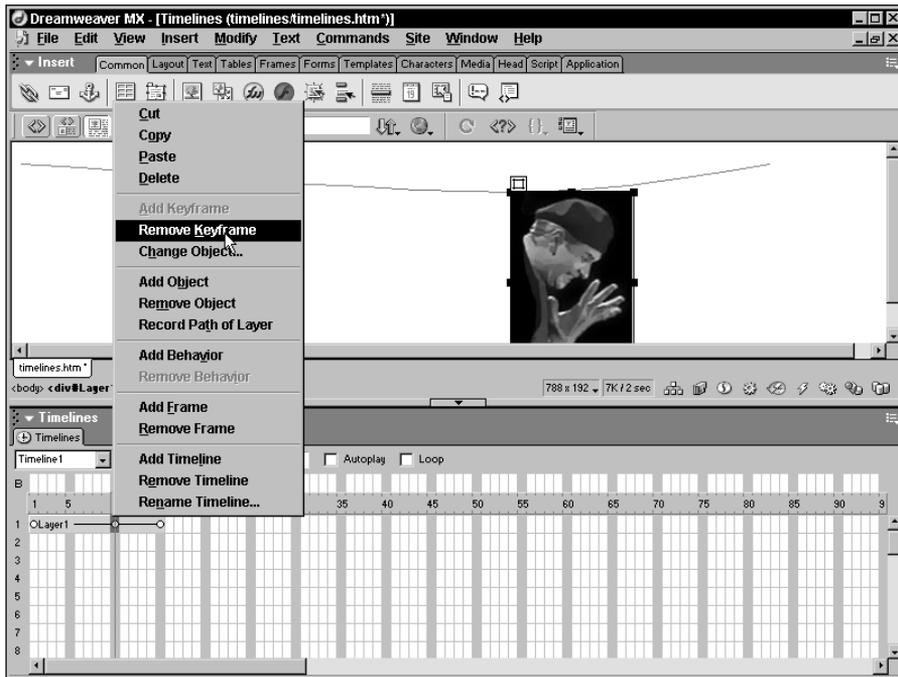


Figure 22-7: The Timelines panel context menu is extremely handy for quick editing.

Recording a layer's path

Plotting keyframes and repositioning your layers works well when you need to follow a pixel-precise path, but it can be extremely tedious when you're trying to move a layer more freely on the screen. Luckily, Dreamweaver provides you with an easier method for defining a layer's movement path. You can simply drag your layer around the screen to create a path, and refine the path or its timing afterward.

The Record Path of Layer command automatically creates the necessary series of keyframes, calculated from your dragging of the layer. To fine-tune your work, you can select any of these keyframes and reposition the layer or even delete it entirely. This feature is a definite time-saver for DHTML animationists.

Keep in mind that a timeline represents not only positions but also positions over time and, therefore, movement. The Record Path of Layer command is very smart when it comes to time; the slower you drag the layer, the more keyframes are plotted. You can vary the positioning of the keyframes by changing the tempo of your dragging. Moreover, the duration of the recorded timeline reflects the length of time spent dragging the layer. To record a layer's path, perform the following steps:

1. In the Document window, select the layer you are going to move.



Make sure that you've selected the layer itself and not its contents. If you've correctly selected the layer, it has eight selection boxes around it.

2. Drag the layer to the location in the document where you want it to be at the start of the movement.

3. Right-click (Control+click) the selected layer and choose Record Path from the context menu. If it's not already open, the Timelines panel appears.
4. Click the layer and drag it around onscreen to define the movement. As you drag the layer, Dreamweaver draws a gray line that indicates the path it is creating (see Figure 22-8).

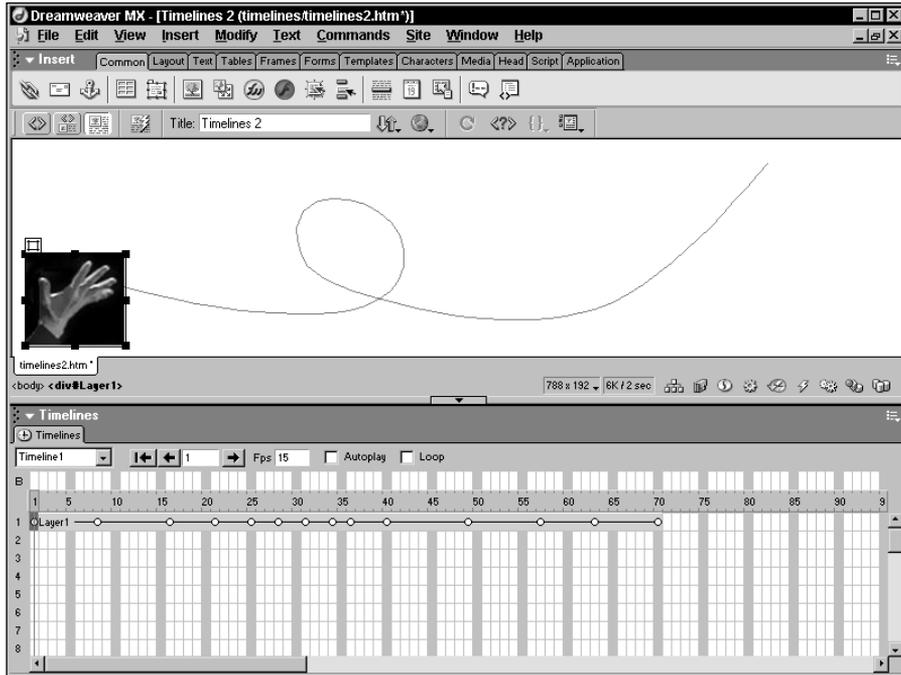


Figure 22-8: To record a layer's path, Select Modify ⇨ Timeline ⇨ Record Path of Layer and then drag your layer in the Document window.

Each gray dot represents a keyframe. The slower you draw, the closer the keyframes are placed; moving quickly across the Document window causes Dreamweaver to space out the keyframes.

5. Release the mouse to end the recording.

Dreamweaver displays an alert reminding you of the capabilities of the Timelines panel. Select the Don't Show Me This Message Again option to prevent this dialog box from reappearing.

After you've finished recording a layer's movement, you see a new animation bar in the Timelines panel, representing the motion you just recorded. The duration of the new timeline matches the duration of your dragging of the layer. The keyframes that define your layer's movement (as described in the preceding paragraphs) are inserted in this animation bar. You can use any of the procedures previously described in this chapter to modify the timeline or its keyframes. If you select the same layer at the end of the generated timeline and perform the Record Path operation again, another animation bar is added at the end of the current timeline.



Any new paths recorded with the same layer are added after the last animation bar. You can't select a keyframe in the middle of a path and then record a path from that point; the starting keyframe of the newly recorded path corresponds to the position of the layer in the last keyframe.

Triggering Behaviors in Timelines

Adding a behavior to a timeline is similar to adding a behavior to any object on a Web page. Because timelines are written in JavaScript, they behave exactly the same as any object enhanced with JavaScript.

Use the Behaviors channel section of the Timelines panel to work with behaviors in timelines. You can attach a behavior to a timeline in four ways:

- ♦ Select the frame in which you wish to have the behavior and then right-click (Control+click). Select Add Behavior from the context menu.
- ♦ Select the frame in which you want to activate the behavior and choose Modify ⇨ Timeline ⇨ Add Behavior to Timeline.
- ♦ Open the Behaviors panel and click the frame you wish to modify in the Behaviors channel.
- ♦ Double-click the frame for which you want to add a behavior in the Behaviors channel.

When you attach a behavior to a frame, you can see in the Behaviors panel that the event inserted in the Events column is related to a frame number — for example, `onFrame20`. Each frame can trigger multiple actions.



For more specifics about Dreamweaver behaviors, see Chapters 23 and 35.

Behaviors are essential to timelines. Without behaviors, you cannot play or stop your timeline-based animations. Even when you select the Autoplay or Loop options in the Timelines panel, you are enabling a behavior. The three behaviors always deployed for timelines are Play Timeline, Stop Timeline, and Go to Timeline Frame.

If you are not using the Autoplay feature for your timeline, you must explicitly attach a Play Timeline behavior to an interactive or other event on your Web page. For example, a timeline is typically set to start playing once a specific picture has loaded, or once the user has entered a value in a form's text box, or — more frequently — once the user selects a Play button. You could use the Stop Timeline behavior to pause an animation temporarily.

To use the Play Timeline or Stop Timeline behavior, follow these steps:

1. In the Document window, select a tag, link, or image that you want to trigger the event.
2. Choose Window ⇨ Behaviors or select the Show Behavior button from the Launcher to open the Behaviors panel.
3. In the Behaviors panel, click the Add (+) button, and from the drop-down list, choose either of the following methods:
 - Timeline ⇨ Play Timeline to start a timeline
 - Timeline ⇨ Stop Timeline to end a timeline

4. In the Play Timeline or Stop Timeline dialog box (see Figure 22-9), choose the timeline that you want to play (or stop) from the appropriate Timeline drop-down list.



Figure 22-9: You can use the Stop Timeline behavior to stop all timelines or a specific timeline.

5. Click OK when you are finished.
6. Select an event to trigger the behavior from the drop-down list in the Events column in the Behaviors panel.



Note

As mentioned earlier, if your Show Events For option is set to 3.0 and Later Browsers, the only available event is `onMouseOver`. To make `onClick` and other events available, change the Show Events For to 4.0 and Later Browsers by choosing Add (+) from the Behaviors panel, then selecting Show Events For ⇄ 4.0 and Later Browsers.

When you select the option to loop your timeline, Dreamweaver automatically inserts a Go to Timeline Frame behavior — with the first frame set as the target. You can display any frame on your timeline by inserting the Go to Timeline Frame behavior manually. To use the Go to Timeline Frame behavior, follow these steps:

1. In the Document window, select a tag, link, or image that you want to trigger the event.
2. Choose Window ⇄ Behaviors or select the Show Behavior button from the Launcher to open the Behaviors panel.
3. In the Behaviors panel, select the Add (+) button and choose Timeline ⇄ Go to Timeline Frame from the drop-down list.
4. In the Timeline field of the Go To Timeline Frame dialog box, choose the timeline you want to affect.
5. Enter the desired frame number in the Go to Frame text box.
6. If you'd like the timeline to loop a set number of times, enter a value in the Loop text box. Click OK when you are finished.

Remember that if you don't enter a value, the timeline loops endlessly.



Tip

Depending on the type of effect desired, you may want to use two of the timeline behaviors together. To ensure that your timeline always starts from the same point, first attach a Go to Timeline Frame behavior to the event and then attach the Play Timeline behavior to the same event.

Dreamweaver Technique: Creating a Multiscreen Slideshow

Moving layers around the screen is pretty cool, but you've probably already figured out that you can do a lot more with timelines. One of the possibilities is a graphics slideshow displaying a rotating series of pictures. To demonstrate the range of potential available to timelines, the following sample project shows you how to construct a slideshow with more than one screen, complete with moving layers and triggered behaviors.

This technique has four steps:

- 1. Prepare the graphic elements.** The process is easier if you have most (if not all) of your images for the slideshow—as well as the control interface—ready to go.
- 2. Create the slideshow timeline.** In this project, one timeline is devoted to rotating images on four different “screens.”
- 3. Create the moving layers timeline.** The slideshow begins and ends with a bit of flair, as the screens fly in and fly out.
- 4. Add the behaviors.** The slideshow includes controls for playing, pausing, restarting, and ending the slideshow, which then takes the user to another Web page.

This technique is intended to act as a basis for your own creations, not as an end in itself. You can add many variations and refinements; for example, you can preload images, make rollover buttons, and add music to the background. What follows is a fundamental structure focused on the use of timelines, which you can extend with additional objects as needed.

**Note**

The result of this Dreamweaver Technique can be viewed only by 4.0 browsers or later.

Step 1: Preparing the graphic elements

Using a timeline for a slideshow presentation has only one restriction, but it is significant: All the graphics in one “screen” must have the same dimensions. The timeline doesn't actually change the image tag; it only changes the file source for the tag. Thus, the Height and Width values of the last image inserted override all the values for the foregoing graphics.

Luckily, all major image-processing software can resize and extend the canvas of a picture with little effort. When creating a slideshow, you may find it useful to do all of the resizing work at one time. Load in your images with the greatest width and height—they may or may not be the same picture—and use these measurements as your common denominators for all graphics.

Create your interface buttons early, rather than later. Experience shows that the more design elements you prepare ahead of time, the less adjusting you have to do later. Also, activating a timeline with a behavior is a straightforward process, and a finished interface enables you to incorporate the buttons quickly.

Finally, you should create and place the layers you want to use. The sample Web page in this technique is comprised of four screens, all of the same dimensions. The four different layers are uniquely named, but they are all the same size.

Tip

If you are making multiple versions of the same layer, consider changing the default layer size to fit your design. Choose Edit ⇨ Preferences; then, in the Layers panel, set your desired Width and Height values. All the layers incorporated in the Web page with the Insert ⇨ Layer command will now automatically size to these default settings.

To recap, use the following steps to prepare your graphics:

1. Create the images to be used as slides. Remember to make all the slides for a given slideshow screen the same height and width.
2. Prepare and place your interface buttons.
3. Create the number of layers that you need for the different screens in the slideshow.
4. Position your layers so that each can hold a different slide. The example has four layers, centered on the screen in two rows.
5. Insert your opening slides into each of the layers.

Note

Your opening slide doesn't have to be a graphic image. You could also use a solid-colored GIF or a slide with text.

Try to work backward from a final design whenever layer positioning is involved. At this stage, all of the elements are in their final placement, ready for the slideshow to begin (see Figure 22-10). Next, you can activate the slideshow.

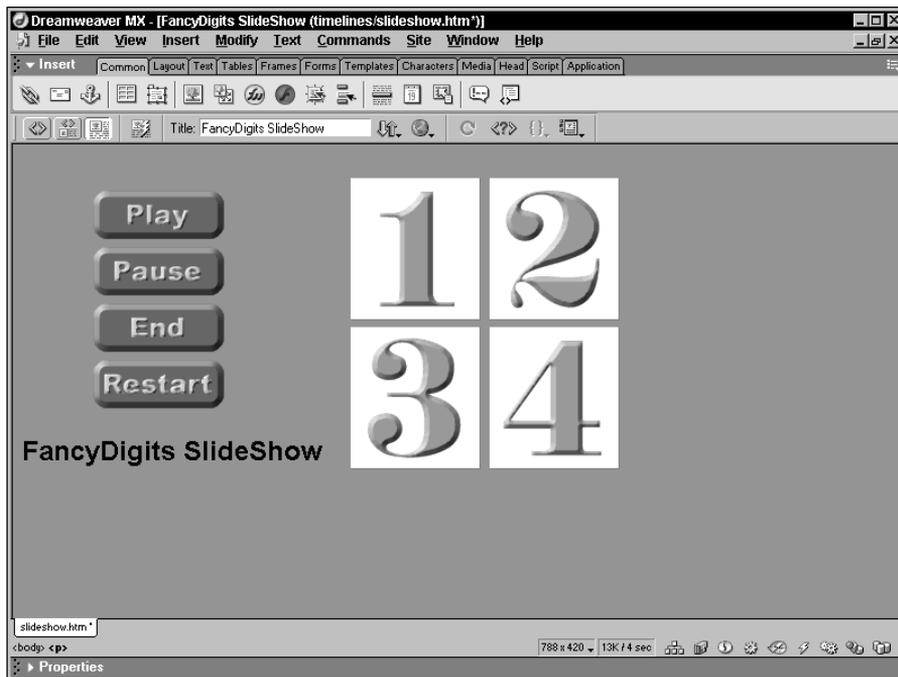


Figure 22-10: Before activating any layers or setting up the slideshow, design the layout.

Step 2: Creating the slideshow timeline

For all the attention that timelines and layers receive, you may be surprised that one of the best features of Dreamweaver timelines has nothing to do with layers. You can use timelines to change images anywhere on your Web page — whether or not they are in layers. As explained in Step 1, the timeline doesn't actually replace one `` tag with another, but rather alters an image by swapping its `src` attribute value. The `src` attribute changes — just as changes in a layer's position, shape, or depth — must happen at a keyframe.

In planning your slideshow, you need to decide how often a new slide appears, because you must set keyframes at each of these points. If you are changing your slides every few seconds, you can change the frame rate to 1 fps. This setting helps you easily keep track of how many seconds occur between each slide change (and because no animation is involved with this timeline, a rapid frame rate is irrelevant). Note, however, that on the timeline involving moving layers described previously in this chapter, the frame rate should be maintained at around 15 fps. Each timeline can have its own frame rate.

The only other choices involve the Autoplay and Loop options. As with frame rate, you can set each timeline to its own options without interfering with another timeline. This example has the slideshow loop, but does not start automatically. Use the Play button to enable the user to start the show. First, however, let's add the images to the slides. To put images into a slideshow on a timeline, follow these steps:

1. Choose Window ⇨ Others ⇨ Timelines to open the Timelines panel.
2. If desired, rename Timeline1 by selecting the name and typing your own unique name.
3. Select one image from those onscreen in the positioned layers and drag the graphic to the Timelines panel.



Caution

Be sure to grab the image, not the layer.

4. Release the animation bar at the beginning of the timeline.
5. Repeat Step 3 and Step 4 for each image until all images are represented on the timeline.
6. Change the frame rate by entering a new value in the Fps text box. This example changes the frame rate to 1.
7. Select the Loop and/or Autoplay option, if desired.
8. On one of the animation bars representing images, select the frame for a keyframe.
9. Choose Modify ⇨ Timeline ⇨ Add Keyframe, or right-click (Control+click) the frame on the timeline and choose Add Keyframe from the context menu.
10. With the keyframe selected, in the Image Property inspector, select the Src folder to locate the graphic file for the next slide image.
11. Repeat Step 9 and Step 10 until every animation bar has keyframes for every slide change, and each keyframe has a new or different image assigned.

In this slideshow example, the slide changes are staggered: slideshow 1 changes slides every two seconds, slideshow 2 and 3 change slides every four seconds, and slideshow 4 changes slides every eight seconds. You can see this in Figure 22-11 by looking at the keyframe placement (the white circles).

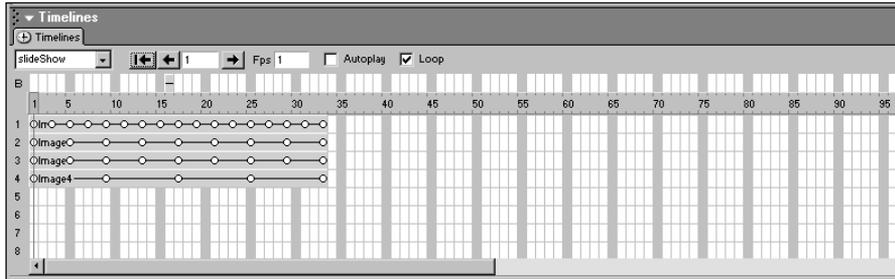


Figure 22-11: Each keyframe on each animation bar signals a change of the slide image.

Tip

To preview your slide changes, you don't have to go outside of Dreamweaver. Just click and hold down the Play button on the Timelines panel.

Step 3: Creating the moving layers timeline

At this stage, the slideshow is functional but a little dull. To add a bit of showmanship, you can “fly in” the layers from different areas of the Web page to their final destination. This task is easy—and to complete the effect, the layers “fly out” when the user is ready to leave.

You can achieve these fly-in/fly-out effects in several ways. You can put the opening fly-in on one timeline and the ending fly-out on another. A more concise method combines the fly-in and fly-out for each layer on one timeline—separating them with a Stop Timeline behavior. After the fly-in portion happens when the page has loaded (because the example selects the Autoplay option for this timeline), the fly-out section does not begin to play until signaled to continue with the Play Timeline behavior. To create the moving layers' opening and closing for the slideshow, follow these steps:

1. Choose Modify ⇨ Timeline ⇨ Add Timeline, or right-click (Control+click) the Timelines panel and choose Add Timeline from the context menu.
2. Rename your new timeline if desired.
3. Select any one of the layers surrounding your images and drag it onto the Timelines panel.

Caution

This time, make sure you move the layers—not the images.

4. To set the amount of time for the fly-in section to span, drag the final keyframe of the animation bar to a new frame. The example sets the end at 30 frames, which at 15 fps lasts 2 seconds.
5. From the Document window, select the same layer again and drag it to the Timelines panel. Place it directly after the first animation bar. This animation bar becomes the fly-out portion.
6. Drag the final keyframe to extend the time, if desired.

7. At this point, all four keyframes — two for each animation bar — have exactly the same information. Now change the positions for two keyframes to enable the layer to move. Select the first keyframe in the opening animation bar.
8. Reposition the layer so that it is offscreen. Although you can complete this task manually to the right or bottom of the screen by dragging the layer to a new location, you can also use the Layer Property inspector to input new values directly for the Left and Top attributes.


Tip

Use negative Top or Left values to move a layer offscreen above or to the left of the browser window.

9. From the Timelines panel, select the last keyframe of the closing animation bar.
10. Reposition the layer offscreen. If you want the layer to return in the same manner as it arrived, enter the same values for the Left and Top attributes as in the first keyframe of the opening animation bar.
11. Repeat Steps 3 through 10 for every layer.
12. Finally, select the Autoplay checkbox so that this timeline begins playing automatically when the Web page is loaded.

Now, when you preview this timeline, the layers fly in and immediately fly out again. Figure 22-12 shows the layers in the example toward the end of their initial fly-in animation. In the final phase of the technique, you add behaviors to put the action under user control.

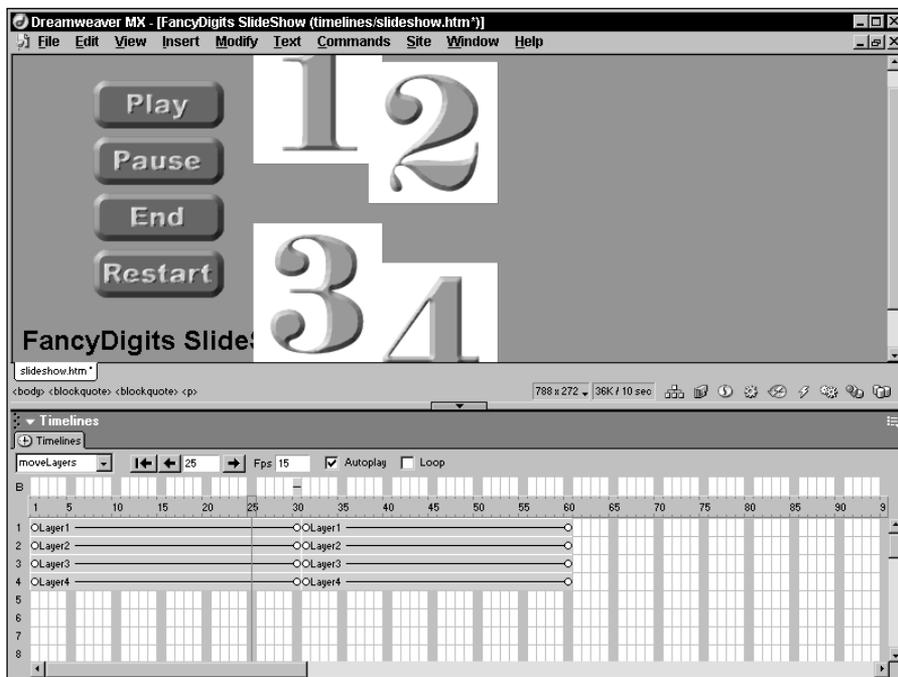


Figure 22-12: You can use two animation bars side by side to achieve a back-and-forth effect.

Step 4: Adding the behaviors

Although it may be fun to watch an unexpected effect take place, giving the user control over aspects of a presentation is much more involving—for the designer as well as the user. The example is ready to incorporate the user-interaction aspect by attaching Dreamweaver behaviors to the user interface and to the Behaviors channel of the Timelines panel.

Two timeline behaviors have already been attached to the example. When the Loop option is selected in Step 2 for the slideshow timeline, Dreamweaver automatically includes a Go to Timeline Frame behavior after the final frame; this sends the timeline back to the first frame. In the moving layers timeline, enabling the Autostart option causes Dreamweaver to attach a Play Timeline behavior to the `onLoad` event of the Web page's `<body>` tag. To complete the project, you need to add five behaviors.

First, you need a behavior to stop the moving layers from proceeding after the fly-in portion of the animation:

1. From the Timelines panel, double-click the final frame of the first animation bar in the Behaviors channel.
2. In the Behaviors panel, select Timeline ⇄ Stop Timeline from the Add (+) button drop-down list.
3. From the Stop Timeline dialog box, select the timeline that contains the moving layers.
4. Click OK. An `onFrame` event is set for the Stop Timeline action by default.

Second, you need a behavior to enable the user to begin playing the slideshow:

1. In the Document window, select the Play button.
2. In the Behaviors panel, select the Timeline ⇄ Play Timeline action from the Add (+) button drop-down list.
3. In the Play Timeline dialog box, choose the timeline representing the slideshow.
4. Click OK. Use the drop-down arrow in the Events column to select an `onMouseDown` event to trigger the action.

The next behavior enables the user to stop the slideshow temporarily:

1. In the Document window, select the Pause button.
2. In the Behaviors panel, select the Timeline ⇄ Stop Timeline action.
3. Choose the layer representing the slideshow in the Stop Timeline dialog box.
4. Click OK. Use the Events column drop-down arrow to select an `onMouseDown` event to trigger the action.

To enable the user to begin the slideshow from the beginning, follow these steps:

1. In the Document window, select the Restart button.
2. In the Behaviors panel, select the Timeline ⇄ Go to Timeline Frame action.
3. In the Go to Timeline Frame dialog box, choose the layer representing the slideshow.
4. Enter a 1 in the Go to Frame text box.
5. Click OK. Use the Events column arrow to select an `onMouseDown` event to trigger the action.

6. With the Restart button still selected, add the Timeline ⇄ Play Timeline action.
7. In the Play Timeline dialog box, choose the layer representing the slideshow.
8. Click OK. Use the Events arrow to select an `onMouseDown` event to trigger the action.

To end the presentation and move the user on to the next Web page, follow these steps:

1. In the Document window, select the End button.
2. In the Behaviors panel, select the Timeline ⇄ Play Timeline action.
3. Choose the timeline representing the moving layers in the Play Timeline dialog box and click OK. The timeline begins playing where it last stopped — just before the layers are about to fly out. Use the Events arrow to select an `onMouseDown` event to trigger the action.
4. With the End button still selected, add the Go to URL action.
5. In the Go to URL dialog box, enter the path to the new page in the URL text box or select the Browse (Choose) button to locate the file. Click OK when you are finished.

The project is complete and ready to test. Feel free to experiment, trying out different timings to achieve different effects.



You can test the final working version by using your browser to view the Multiscreen Slideshow Demo in the Examples folder of the CD-ROM that accompanies this book.

Summary

Timelines are effective tools for developing pages in which events need to be triggered at specific points in time.

- ♦ Timelines can affect particular attributes of layers and images, or they can start any Dreamweaver behavior.
- ♦ Use the Timelines panel to set an animation to play automatically, to have it loop indefinitely, and to change the frames-per-second display rate of the timeline.
- ♦ You must use one of the timeline behaviors to activate your timeline if you don't use the Autoplay feature.

In the next chapter, you learn how to use Dreamweaver behaviors to enhance the interactivity of your sites.

